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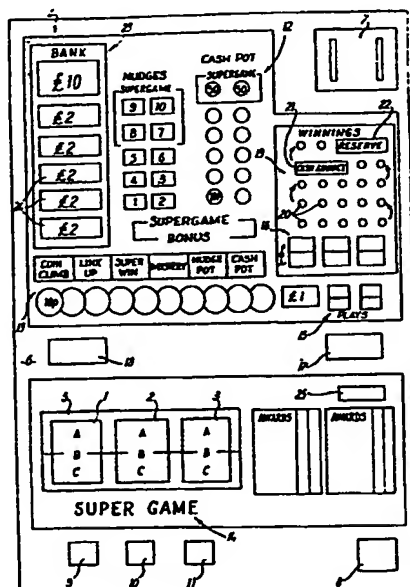
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## (54) Entertainment machines

(57) A coin-operated machine, particularly of the fruit machine kind, can be used to play a main game in which symbol combinations are selected for example by the rotation of reels (1, 2, 3). Monetary awards corresponding to attained winning combinations are monitored with a counter (16) which has a maximum count. If a win is achieved, the player can stake some or all of the win value on a secondary game, which may also involve the selection of symbols with the reels (1, 2, 3) and the counter (16) is appropriately incremented if a win is achieved with the secondary game. Any attained total award value in excess of the maximum count is displayed on an overflow device (19). On reaching a target overflow level (21) the player is given the opportunity of staking overflow value on a game which has an enhanced win likelihood. This game may involve pressing a button (8) while lights are flashing on a ladder display (23) with the aim of achieving operation of the button (8) simultaneously with illumination of a winning rung (24) of the ladder (23). If pay out button (17) is operated before the target overflow level (21) is obtained the maximum count of counter (16), e.g. £2, is paid out and the excess value in device (19) is cancelled. The machine may include hold and nudge features.

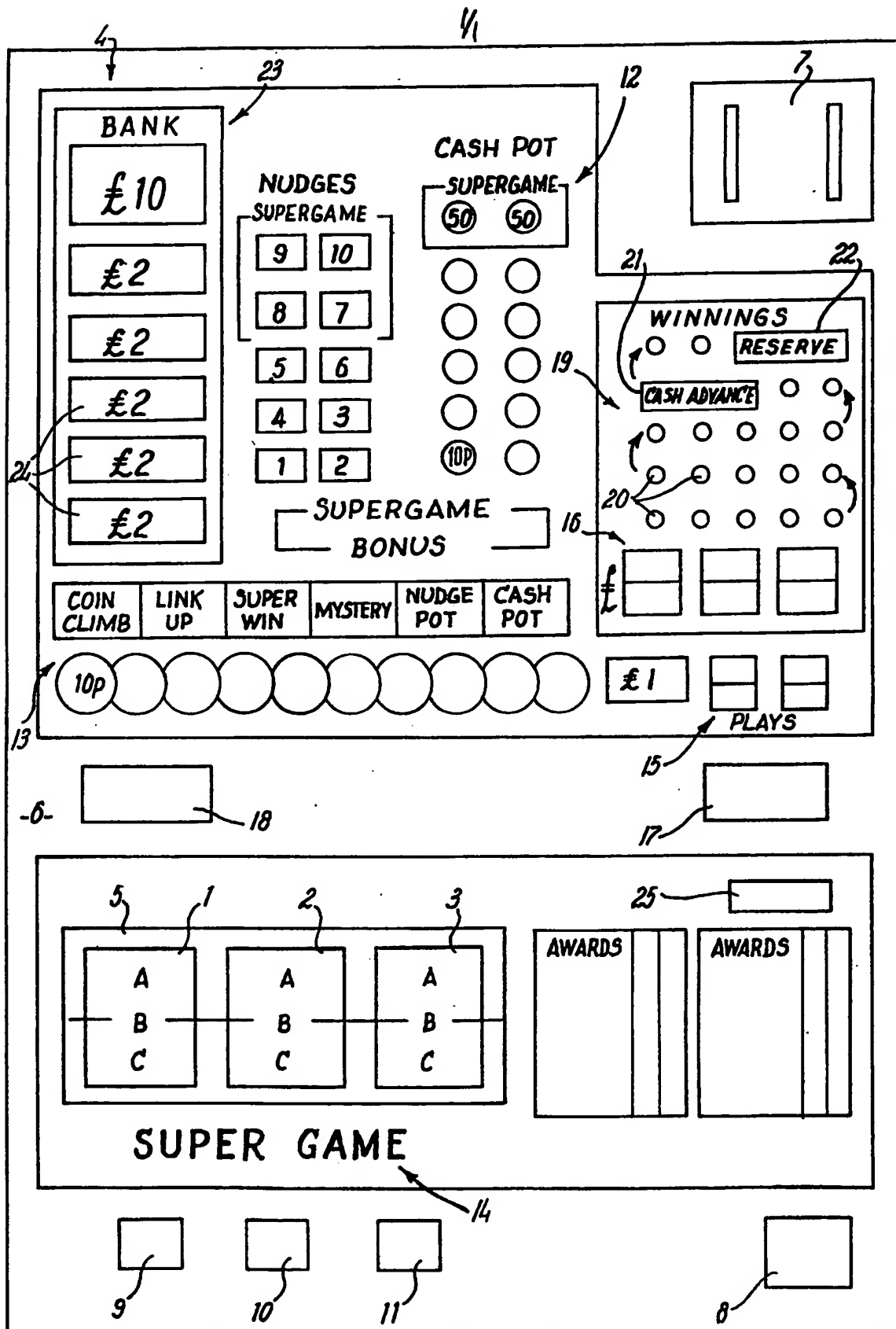


At least one drawing originally filed was informal and the print reproduced here is taken from a later filed formal copy.

The claims were filed later than the filing date within the period prescribed by Rule 25(1) of the Patents Rules 1982.

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ENTERTAINMENT MACHINES

This invention relates to a coin- (or token-) operated entertainment machine of the kind which is operable to play games resulting in the selection and display of combinations of symbols and with which a win  
5. indication is given in the event that a symbol combination of a predetermined winning nature is obtained. The invention is more particularly, although not exclusively, concerned with such a machine which is a fruit machine and with which the displayed symbols (typically representations of fruit) are selected at random, for example, by  
10. rotation of reels or by change of a video display simulating the rotation of reels.

It is known to provide a fruit machine with a 'gamble' feature whereby, after attaining a win indication but before receiving an award (in the form of a cash payout) corresponding to the win, the  
15. player has the option of actuating a gamble device which can modify the award by increasing or reducing (or cancelling) it.

It is also known to provide a supplementary game feature whereby, after attaining a win indication in a main game, but before receiving an award corresponding to the win, the player has the option of  
20. playing a supplementary game (which may be of the same nature as the main game) using the attained win as a stake, and the player can increase or decrease his previously attained award depending on the outcome of the supplementary game.

These 'gamble' and 'supplementary game' features advantageously  
25. enhance the entertainment value of the machine. However, a limitation may be imposed on the enhancement in so far as there is a maximum

win value which can be awarded, whereby when this win value is attained there is no benefit to further use of the gamble or supplementary game features. Thus, on attaining a maximum award, if the player wishes to try to win further awards, he has to obtain a

5. payout of the maximum award and then put this as a fresh stake back into the machine. This tends to detract from the entertainment value of the machine and also can result in increased wear of the coin mechanism.

An object of the present invention is to provide a machine with

10. which the player can, with possible benefit to him, use attained winnings as a stake without requiring such winnings to be paid out and re-inserted, even when such winnings amount to a predetermined maximum award value.

According to the invention therefore there is provided a coin-

15. (or token-) operated entertainment machine having a game-playing device operable to play a primary game resulting in the selection and display of a combination of symbols, and an award counter having a predetermined maximum count thereto for recording an award value corresponding to an attained winning symbol combination, said game-

20. playing device also being operable to play a secondary game using at least part of such recorded award as a stake whereby the recorded award value is increased in the event that a win is attained in said secondary game, characterised by the provision of an overflow device operable to monitor an attained award value in excess of said

25. predetermined maximum count and in response to a predetermined said excess value to initiate a game-playing routine of enhanced win

likelihood.

- With this arrangement, even in the case where a maximum win value has been attained, there is still benefit to the player in playing further secondary games since there is the incentive of achieving
5. enhanced win capabilities in the event that the predetermined excess award value is attained. The enhanced win capability may come into effect when any excess award value is attained. Preferably however a target value has to be reached before the player is rewarded with the enhanced win capability.
10. In a particularly preferred embodiment, the overflow device includes a visual display device, such as a series of indicators which can be illuminated, whereby a visual indication can be given of the magnitude of the excess award value attained. The counter may also be arranged to give a visual indication of the magnitude of the recorded
15. count and thus may comprise a digital display device.

With regard to the said primary game, in addition to the selection of symbol combinations, provision may also be made for the award of bonuses and/or chance wins whereby the counter may also record award values corresponding to such bonus and/or chance wins.

20. With regard to the secondary game this may be of the same nature as the primary game. Preferably however the likelihood of winning on a secondary game is greater than the likelihood of winning on a primary game.

- The stake for the secondary game may be a fixed amount which
25. may be the same as a fixed amount required to play a primary game. Alternatively, the stake may be a higher amount giving the possibility

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of win multiplication. Provision may be made for successive secondary games to be played while there is sufficient win credit recorded by the counter.

- In the enhanced win capability mode the routine may be such
5. that the player is presented with a simple game in which he has to operate a control to perform a chance operation resulting in either increase in or retention of the attained award. For example, the player may press a control button while a lamp is flashing whereby the award is increased if the button is pressed simultaneously with
  10. illumination of the lamp. The likelihood of increasing the award may be 50% or approximately 50%. If the player fails to increase the award, the machine may revert to its normal primary or secondary, preferably primary, game-playing mode and further games can be played as long as there is sufficient game-playing credit.
  15. The award value may represent monetary (or token) value and the player may have the option at any time of obtaining a payout of coins (or tokens) to the value recorded by the counter.

- Most preferably the machine of the invention is a fruit machine and the displayed symbols (which may be representations of fruit) are
20. selected at random as by rotation of reels (usually three or four reels) having such symbols marked around the periphery thereof, or by the operation of a vdu display simulating such rotation of reels or by the random illumination of symbols on areas of a display panel or otherwise.

25. The invention will now be described further by way of example only and with reference to the accompanying drawing which is a

diagrammatic view of part of the front of one form of an entertainment machine according to the invention.

The machine is a fruit machine having three reels 1, 2, 3 which are rotatable within a housing 4 behind a window 5 in a front panel

5. 6.

Each reel 1, 2, 3 has pictures of fruit (designated A, B, C) at 20 positions around its periphery, and rotation of each reel is effected and also arrested by a microprocessor-controlled stepping motor, the arrangement being such that the reel always comes to rest in precise registration with the window. Each stopping position is identified by the microprocessor control circuitry in known manner.

In use, the machine is actuated by a player by insertion of one or more coins or tokens into a coin mechanism 7 and a starter button 8 is pressed to cause the three reels 1, 2, 3 to rotate for different random periods of time before coming to rest. When the reels 1, 2, 3 come to rest, their stopping positions are identified and a win indication is produced in the event that the identified stopping positions correspond to the display of a predetermined winning combination of fruit (say three fruit of the same kind) at predetermined positions in the window 5 (e.g. on a horizontal win line passing through the middle of three displayed fruit for each reel).

There is a respective player-operable button 9, 10, 11 for each reel beneath the window 5, for 'hold' and 'nudge' features. At the start of some games, as selected on a random basis, the buttons 9-11 are made available for hold operation and when so operated by the player the or each pertaining reel 1, 2, 3 is held against rotation

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during the course of the ensuing game. At the end of some games, as selected on a random basis, the buttons 9-11 are made available for nudge operation and when so operated by the player the or each pertaining reel 1-3 is indexed through a number of steps (i.e. stopping  
5. positions) as determined by the action taken by the player and within the limits of a total permitted number of nudge steps. Alternatively a player-initiated automatic nudge facility (which automatically nudges the reels through the optimum number of steps within the imposed limits) may be provided as described in Patents Nos. 2092797 and  
10. 2144568.

In accordance with conventional practice the machine also includes various additional chance win features, whereby, for example, at the end of a game the player can be awarded additional 'nudges', or the contents of a jackpot 12 or other bonus or randomly selected win can  
15. be made available to the player on a totally random basis, or in dependence on the advancement along a 'ladder' 13 (as indicated by illumination of successive 'rungs') or in dependence on attainment of selection of all letters of a 'name fill' word 14 (e.g. the name of the game, as indicated by illumination of all letters). In the latter respect  
20. the advancement along the ladder 13 and/or the selection of the letters of the word 14 may be effected totally randomly or in dependence on the appearance of subsidiary indicia (such as numbers or letters) on the reels 1, 2, 3 on the win line.

Moreover, the machine has two LCD or LED digital displays 15  
25. and 16, and two player-operable buttons 17, 18 respectively for win collection, and for secondary game selection (yet to be described).



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The digital displays 15, 16 comprise respectively a monetary credit display 15 and an accumulated win display 16.

When coins are inserted into the machine the credit display 15 is appropriately incremented, and correspondingly this section is  
5. appropriately decremented as credit is used up by playing games.

If the outcome of a game is a win having a corresponding monetary award the display 16 is incremented to show the value of the award, such value being the total of that derived from any winning symbol combination on the reels 1, 2, 3 and any chance win or bonus derived  
10. from features such as the jackpot, the ladder and the name fill features.

The player now has the option of pressing the payout button 17 or the secondary game button 18. If the button 17 is pressed coins and/or tokens are paid out to the player equal to the win value shown on the display 16 and such display is correspondingly decremented  
15. to zero.

If instead the player presses the other button 18 the display 16 is decremented by an amount equal to the cost of a game and a secondary game is now played using the decremented amount as a stake. This secondary game may be of the same nature as the primary  
20. game (i.e. involving rotation of the reels 1, 2, 3 with the aim of obtaining a winning combination, together with actuation as appropriate of the chance win or bonus features). However, as an incentive, the awards may be enhanced. That is, winning symbol combinations may qualify for higher awards, the jackpot 12 may start from a partly  
25. filled conditions, the word fill 14 may start partly filled, the ladder 13 may start at a higher rung etc.

If the player does not attain a win with the secondary game he can obtain a payout of the residue of his winnings or he can continue playing secondary games until his winnings have been consumed.

If the player wins, the value of the awarded win is added to the  
5. accumulated count shown on the display 16, and the player can obtain a payout or play further supplementary games as desired.

The display 16 is set for a maximum accumulated win value (say £2.00) and, when this is attained, the value of any further wins is monitored and displayed on an overflow device 19. This overflow  
10. device 19 comprises a series of indicators 20 which can be illuminated. The indicators 20 are illuminated successively along a predetermined path as excess win value is built up. If excess win value is reduced because supplementary games are played which do not result in wins, the monitored excess win value is appropriately decremented as  
15. represented by successive extinguishing of the indicators back along the predetermined path. If sufficient excess win value is generated, representing a predetermined target value, a 'cash advance' indicator 21 is illuminated. Further generated excess win value results in further indicators 20 being illuminated, and finally a 'reserve' indicator  
20. 22. Any further excess value does not result in advancement beyond this 'reserve' indicator.

If the payout button 17 is operated when an excess value is indicated which is less than that necessary to reach the 'cash advance' indicator, the maximum award (say £2.00) is paid out, the monitored  
25. excess value is cancelled, and the display 16 is decremented to zero.

If the payout button 17 is operated when an excess value is

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indicated which is equal to or greater than that necessary to reach the 'cash advance' indicator 21, the maximum award (say £2.00) is indicated in a 'bank ladder' 23 by illumination of the bottom 'rung' 24 marked with the award value, the display 16 is decremented to zero.

5. The player can now press the payout button 17 to obtain the value indicated in the bank ladder 23, or he can play a further game (after inserting further coins or tokens as necessary). This further game is played with a much enhanced likelihood of winning. For example, the chance of winning may be at least 50% and this may be
10. achieved by the game-playing system which intermittently flashes the next 'rung' of the 'bank ladder' 23. If the play button 8 is pressed simultaneously with illumination of the next rung, this next rung is fixedly illuminated and the player is credited with a further £2.00 win and the procedure is then repeated for the next rung of the ladder.
15. In this way it is possible for the player to build up successive £2.00 values in the bank 23 until a maximum total of £10.00 is reached. The £10.00 is then paid out and the machine re-set. If at any time the play button 8 is not pressed simultaneously with the illumination of the flashing rung, the machine reverts to a normal reel-spin mode
20. (in primary or secondary format), and the winnings corresponding to the existing illuminated rungs of the bank ladder 23 can be collected by the player.

- When the play button 8 is pressed in the enhanced win likelihood mode, whether the result is advancement up the bank ladder 23, or
25. reversion to the reel-spin mode, credit is decremented by the predetermined cost of a game. The arrangement is such that the

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likelihood of the player pressing the button 8 simultaneously with illumination of the next rung of the bank ladder is 50% or approximately 50%.

With the arrangement described above the player can continue  
5. playing, with benefit, beyond a maximum £2.00 winning level, without having to re-insert coins into the machine.

It is of course to be understood that the invention is not intended to be restricted to the details of the above embodiment which are described by way of example only.

CLAIMS

1. A coin- (or token-) operated entertainment machine having a game-playing device operable to play a primary game resulting in the selection and display of a combination of symbols, and an award counter having a predetermined maximum count thereto for recording an award value corresponding to an attained winning symbol combination, said game-playing device also being operable to play a secondary game using at least part of such recorded award as a stake whereby the recorded award value is increased in the event that a win is attained in said secondary game, characterised by the provision of an overflow device operable to monitor an attained award value in excess of said predetermined maximum count and in response to a predetermined said excess value to initiate a game-playing routine of enhanced win likelihood.
2. A machine according to claim 1 characterised in that the enhanced win capability comes into effect when a target value has been reached.
3. A machine according to claim 1 or 2 characterised in that the overflow device includes a visual display device whereby a visual indication can be given of the magnitude of the excess award value attained.
4. A machine according to any one of claims 1 to 3 characterised in that the counter is arranged to give a visual indication of the magnitude of the recorded count.
5. A machine according to any one of claims 1 to 4 characterised in that provision is made in the said primary game for the award of bonuses and/or chance wins and the counter is arranged also the record award value corresponding thereto.

6. A machine according to any one of claims 1 to 5 characterised in that the likelihood of winning on a secondary game is greater than the likelihood of winning on a primary game.
7. A machine according to any one of claims 1 to 6 characterised in that the stake for a secondary game is higher than that for a primary game.
8. A machine according to any one of claims 1 to 7 which is a fruit machine and the displayed symbols are selected at random by rotation (or simulated rotation) of reels.
9. A machine according to claim 8 characterised in that symbols are also selected in a secondary game in like manner to a primary game.
10. A machine according to claim 8 or 9 characterised in that the enhanced win likelihood game involves the operation of a control button in relation to a flashing light arrangement whereby a win is achieved if the button is operated simultaneously with the illumination of a win display.
11. A machine substantially as hereinbefore described with reference to and as illustrated in the accompanying drawing.